grasses and weeds, the inner nest resting upon a mass of large sticks, loosely placed. The nest-lining was of grass and a few feathers. In shape the eggs are an elongated oval, tapering to a point at the small end, instead of being rather rounded and obtuse as in *H. palmeri*. Their ground-color is greenish-blue, somewhat deeper than in the egg of Palmer's Thrasher. One has large blotches of yellowish-brown and lavender sparingly scattered over the egg, a few extending nearly to the small extremity. In the others the marks are of the same colors, but reduced to fine spots, quite numerous, and confluent near the great end, but scarcely extending to the opposite extremity at all.

Leconte's Thrasher was seen at several points between Casa Grande and Phœnix during May, and was still singing. Upon the desert a few miles north of Phœnix I took a mated pair, on the 14th, in very nearly the same locality at which Mr. Stephens captured the fifth known specimen, in 1880. At this place, for the first and only time, I found all four of the Arizona Thrashers together.

[*To be continued.*]

THE NORTH CAROLINA MOUNTAINS IN WINTER.

BY CHARLES F. BATCHELDER.

ALTHOUGH of late years ornithologists have been ransacking nearly every accessible corner of this continent, they have, strangely enough, neglected the mountain region of the Southern Alleghanies. There seems to have been an impression that the birds of the Atlantic States were so well known that it would be idle to look for important discoveries there, where the fathers of our science had done their work, so the tide has been setting to the newer regions of the West. In truth, the earlier ornithologists were necessarily far from thorough in their explorations, and there have remained some corners of the field in which they worked where there is yet much to be gleaned. Such is the case with our southern mountains. Magazine writers have enlarged upon the beauties of their scenery, geologists and botanists have visited them, and have brought to light many interesting discov-

eries, but to the ornithologist it has remained until lately an unknown land.

Mr. William Brewster has the credit of being practically the first in the field, and his hurried, but most successful, exploration of the region last season has at length given us an accurate knowledge of its summer fauna. Its bird life at other seasons being still merely a subject for conjecture, I gladly seized an opportunity last December of investigating to a slight extent its winter fauna.

In the last number of 'The Auk' Mr. Brewster has given such an excellent description of the physical features of the country, and of the general character of its vegetation, that it is quite unnecessary for me to say more on this subject. In winter, of course, with the exception of the Coniferæ, the rhododendrons, laurel, and a few smaller shrubs, the woods are leafless. The weather during my stay was with few exceptions all that could be wished, cloudless skies and an equable temperature being the rule. It was cold enough for the ground to freeze hard almost every night, but the power of the sun's rays converted the surface into mud again in the daytime. The only exceptions to this beautiful weather were several cold blustering days with snow, a few flakes floating in the air, or even a fall of a few inches upon the ground. In almost every winter storm the higher mountains are whitened with snow, while at the same time in the valleys it is more likely to be raining. The mean temperature in December at Asheville (elevation 2250 ft.) is stated to be 37° F.

My first stay was at Asheville, and my observations here were made chiefly between December 10 and 19 inclusive. Much of the country about the town is under cultivation; corn and tobacco being the principal crops of the small farms which occupy the low ground along the rivers or lie nestled in the sheltered 'coves' between the hills.

About these farms, and in the thickets that border them or fringe the streamlets which take their rise in nearly every cove, I was sure to find some birds. Prominent among them were the Snowbirds (*Junco hyemalis*) in straggling flocks of ten or twenty. With them were often to be found Field Sparrows, Grass Finches, and Song Sparrows, though in smaller numbers, and occasionally two or three White-throated Sparrows, Goldfinches, or Bluebirds were to be seen in the company. One or

two Cardinals, or a Towhee, sometimes joined their ranks, probably not because they found such society especially congenial, but rather influenced by that gregarious spirit that seems more or less to possess all birds at this season, and I fancy they did not stay long with them. Indeed, all these species often showed a disposition to separate from each other, and, bound together as they were, chiefly by community of tastes in the matter of food, the make-up of the flocks was constantly changing.

Another conspicuous bird about these farms was the Carolina Wren. In the thickets along the little streams it was to be seen dodging back and forth; often the first intimation of its presence was a bit of its song, or a vigorous scolding when its affairs went wrong in any way.

Most of the land that is not farmed is covered with hard woods, oaks predominating, though there are some large tracts of pine woods (*Pinus inops* and *P. rigida*), especially on the hills. In these hard woods Tufted Titmice were generally to be found, usually in small parties of half a dozen or so, and frequently a few Carolina Chickadees with them. White-bellied Nuthatches and an occasional Woodpecker—the Downy was far the commonest species—were the only other birds sure to be found in these woods, though various others strayed into them occasionally, the Juncos perhaps the most frequently. Indeed these were ubiquitous, for though their favorite feeding-grounds were in the deserted cornfields and other open places, yet they were often to be seen here, and in the pine woods as well. The Carolina Chickadees and Tufted Tits also frequented the pines, which were the favorite resort of the Golden-crowned Kinglets. They were often in company with the Titmice, though quite as apt to wander about by themselves in little parties of four or five, family parties perhaps, but whether they had come from northern homes to winter here, or had only retreated from the neighboring mountain tops to the shelter of the valleys, was a puzzling question, and one that arose not only in the case of the Kinglets, but in that of others also of the winter visitors. In the pine woods I one day saw two Blue Jays, and I mention it because it was the only time I saw them outside of the town. In the town they were everywhere to be heard and seen, about the houses and in the gardens, where they were the most characteristic bird, the only others to dispute their territory being a few Tufted Tits and Carolina

Chickadees in the shade trees about the houses, and an occasional Bewick's Wren in the gardens. The latter were far from abundant, almost all apparently seeking a warmer climate for the winter. A small colony of House Sparrows that had established themselves in the town a year or more ago had not yet become numerous enough to interfere with the rights of the natives.

Two species I found in the neighborhood of Asheville that are not known to occur in this region in summer. They are the Hermit Thrush and the Meadow Lark. The former I saw singly two or three times; the latter was common in suitable places in small flocks, and I saw a single bird one day in a small field in the middle of the town.

From December 20 to 24 I stayed at Patton's at the foot of the Black Mountain range, a house well known to tourists who ascend Mt. Mitchell. It is near the head of Swannanoa Creek, the north fork of the Swannanoa River, and is closely hemmed in on all sides by mountains, the lofty summits of the Black itself, and nearer Big Craggy and other outlying spurs of the main range. While I was here I did not succeed in reaching any of the high summits of the range, but I spent a couple of hours one fine morning exploring the balsam growth that covers the tops and higher flanks of the mountains. My only reward for this search was a flitting glimpse of a Junco, whether *J. hyemalis* or *J. h. carolinensis* I could not decide, and though the day and place seemed favorable for birds, this was the only feathered creature to be found in the apparently tenantless woods.

The hard woods on the slopes of the mountains and at their base were not without birds. White-bellied Nuthatches and Downy Woodpeckers were to be seen on the giant chestnuts and oaks, and once I met a couple of Pileated Woodpeckers that were making the forest resound with their cries and their noisy tapping. Carolina Chickadees in small flocks wandered through the woods, sometimes accompanied by two or three Tufted Tits and a Nuthatch or a Creeper or two, and with them often several Golden-crowned Kinglets. The only other bird of especial interest was a solitary Raven that flew, hoarsely croaking, high overhead.

About some cornfields that occupied the scanty level stretches near the creek, and clung to the steep sides of some of the lower hills, there were some Song Sparrows and a few Field Sparrows,

Goldfinches, and one or two White-throated Sparrows. But in these fields and in the hard woods bordering them, far outnumbering all the other birds, were flocks of Juncos, and to them I devoted most of my attention, for I found that the flocks contained not only *Junco hyemalis*, which was common about Asheville, but also *J. h. carolinensis*,—a bird I had searched for there in vain. The flocks seemed to consist about equally of the two races, though it was difficult to form exact estimates as to their relative numbers, for at a distance the birds are not easy to distinguish, and they were too wild for much close inspection. The *J. hyemalis* were if anything the shyer of the two; indeed they were much wilder than I have found them in New England, even at the same season. Except in this respect I noticed nothing in the habits of *J. h. carolinensis* that differed from those of our Northern Juncos.

On my return from Patton's to Asheville I spent one afternoon, December 24, at Black Mountain Station on the Western North Carolina Railroad. It is in the valley of the Swannanoa River, bordered on the south by the Blue Ridge, on the north by the outlying spurs of the Black. I found no *Junco h. carolinensis* here, though *J. hyemalis* were plenty. No particularly interesting birds were met with here except a Robin, the only one I observed in the whole region, though I heard of others being seen. From several informants I learn that a few are seen in winter in the valleys, but they are never common at this season.

December 28 I went to Balsam Gap, some thirty miles to the west of Asheville, where I remained about a week. At this point the Ducktown branch of the Western North Carolina Railroad crosses the high range of the Balsam Mountains. The elevation of the Gap itself is about thirty-four hundred feet, while a number of the neighboring summits are over six thousand feet above the sea

About the farms and in the hard woods here I found chiefly the same species as around Asheville and at Patton's. The flocks of Juncos here, as at Patton's, contained both *J. hyemalis* and *J. h. carolinensis*, the latter apparently the more numerous. I noticed nothing new as to their habits, though I spent much time watching them. Their distribution in winter as compared with that of *J. hyemalis* is worth noting. They desert the exposed summits and the higher wind-swept slopes of the mountains, and congre-

gate in the fields and open places below, but apparently never go farther from their homes than they are compelled to. I found them abundant at the base of the Balsam Mountains, and of the Black, but in the valley of the French Broad near Asheville, I did not find one, and even at Black Mountain Station, not half a dozen miles from the foot of the Black, I looked for them in vain. *Junco hyemalis*, on the other hand, was everywhere, at the foot of the higher mountains in company with its Southern cousins, and in the lower open valleys as well.

Another bird that does not apparently stray far from its native mountains is the Winter Wren. I did not meet with it at all at Asheville, but found a few at Balsam Gap. Here it seemed to find the rhododendron thickets as attractive as brush heaps or fallen trees, and but for its fondness for them, might perhaps have seemed more common. The only specimen obtained does not differ from northern ones.

A careful examination of my series of twenty-six specimens of *Junco hyemalis carolinensis* confirms the opinion I formed in the field, that this bird, recently described* by Mr. Brewster, is at least a very distinct race. Geographical considerations, however, lead us to expect that it will not prove to be specifically distinct. My specimens in the autumn plumage differ remarkably little from Mr. Brewster's series of six spring birds which he has kindly lent me for comparison. The former are slightly paler and bluer on the back and head, and the wings and tail are a dull black with a slight plumbeous tinge instead of a brownish shade as in the spring birds. My females are not so deeply colored as the males, and their backs are tinged with brown, of which color the males have little or none. Most of the females have, too, a slight brownish tinge on the flanks. These sexual differences, however, are not great, very slight indeed compared to those of *J. hyemalis*. The color of the iris, noted in twenty-five individuals, was a warm reddish brown. The color of the bill, which I noted carefully in twenty-five fresh specimens, varies slightly in a few cases. With no well marked exception, the bill was of a light bluish horn color, the tip, and a streak over each nostril, being dark brownish. These dark markings varied in extent, and there was in some cases a slight pinkish tinge near the gonys. Roughly speaking, the bill is colored much as in *J. hyemalis*,—except

* Auk, Vol. III, p. 108.

that its general tint is bluish instead of pinkish or yellow. The feet, with little variation, were grayish brown, the toes being considerably darker than the tarsus. The average measurements in centimetres, taken from the dried skins, of fifteen males are: wing, 8.00; tail, 7.05; culmen, 1.12; tarsus, 2.17; of eight females: wing, 7.52; tail, 6.67; culmen, 1.13; tarsus, 2.12.*

A trip to the top of Jones's Knob, one of the high summits of the Balsam range (elevation, 6223 feet), December 30, gave me an opportunity to spend several hours in the heavy balsam growth that covers the higher parts of this range. There were few birds here, however; a small flock of Black-capped Chickadees and a Brown Creeper were the only ones seen. Along the lower edge of the balsams Ruffed Grouse were not uncommon, some half a dozen were flushed. Their favorite resorts are the 'old fields.' These are large open spaces high up on the mountains, which, owing doubtless to their barren soil, bear only a scattered growth of bushes and low trees, and have much the look of abandoned fields. The Grouse do not confine themselves to these places, for among the balsams, even on the summit of the mountain, I found their tracks in the snow that lies unmelted in the thick shade of these dark forests. In coloring they differ little from birds from Northeastern Virginia, and are of the extreme form of *B. umbellus* farthest removed from the northern *B. u. togata*.

Some more Black-capped Chickadees were brought me two days later, shot from a flock of about twenty in the balsams. From what I can learn I do not think they ever go out of these woods. With them I received a Hairy Woodpecker (*Dryobates villosus*) also shot in the balsams, and as it happened I shot one of the southern race (*D. villosus audubonì*) the same day in the valley below, among a hard-wood growth at an elevation of about thirty-three hundred feet.

The Black-capped Chickadees, of which I have a series of thirteen, differ but slightly from the northern representatives of the species. They average a little smaller, and show slight differences in the form of the bill, but unless there may be differences in plumage not observable at this season, they do not seem to be sufficiently unlike to warrant separation, in spite of their isolated situation.

* Average of seven specimens.

I have tried to give some idea of the characteristics of the winter fauna of the mountains, of which hitherto we have known nothing. I only regret that I was not able to investigate it more thoroughly, but I hope the time is not far distant when the region will be better known, and the results of long-continued observations, at various points and at all seasons, will give definite knowledge of its birds in the place of idle conjecture.

I add a list of the birds noted during my stay. I do not include in it some species — such as the Wild Turkey, Woodcock, and several birds of prey — of whose occurrence in winter I have satisfactory evidence, but which did not happen to come under my personal observation.

1. *Merula migratoria.*
2. *Turdus aonalaschkæ pallasi.*
3. *Sialia sialis.*
4. *Regulus satrapa.*
5. *Parus atricapillus.*
6. *Parus carolinensis.*
7. *Parus bicolor.*
8. *Sitta carolinensis.*
9. *Certhia familiaris americana.*
10. *Thryothorus ludovicianus.*
11. *Thryothorus bewicki.*
12. *Troglodytes hiemalis.*
13. *Dendroica coronata.*
14. *Spinus tristis.*
15. *Poocætes gramineus.*
16. *Zonotrichia albicollis.*
17. *Spizella pusilla.*
18. *Junco hyemalis.*
19. *Junco hyemalis carolinensis.*
20. *Melospiza fasciata.*
21. *Pipilo erythrophthalmus.*
22. *Cardinalis cardinalis.*
23. *Passer domesticus.*
24. *Sturnella magna.*
25. *Cyanocitta cristata.*
26. *Corvus corax sinuatus.*
27. *Corvus americanus.*
28 *Sayornis phœbe.*
29. *Ceophlœus pileatus.*
30. *Dryobates pubescens.*
31. *Dryobates villosus.*
32. *Dryobates villosus audubonı.*
33. *Melanerpes erythrocephalus.*
34. *Colaptes auratus.*
35. *Megascops asio.*
36. *Cathartes aura.*
37. *Zenaidura macroura.*
38. *Bonasa umbellus.*
39. *Colinus virginianus.*
40. *Aix sponsa.*